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EXAMINER

KIM, DAVID S

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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REQUEST FOR RECONSIDERATION/OTHER

11. The request for reconsideration has been considered but does NOT place the application in condition for allowance because:

Applicant's arguments filed on 09 February 2009 have been fully considered but they are not persuasive.

Applicant arguments are presented in eight points.

**Regarding the first point**, Applicant states:

1. The Examiner highlights that the rejection of Applicants' claims is based upon "the combination of teachings from Combs and Cook..." (See Office Action p. 8). Applicants well understand that the rejection is based upon the combination of references. However, under 35 U.S.C. § 103, "a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." (See MPEP 2141.02 (VI), quoting *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed.Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). Applicants understand that any active optical communication path will include passive components. However, viewing such components separately does not properly show a passive communication path. Combs as a whole clearly teaches an active downstream path. Thus, the Examiner's selection of components from Combs is inconsistent with Combs's teaching of an active downstream path. Thus, such an interpretation is contrary to the "as a whole" examination requirement.

(Remarks, p. 6, paragraph item 1, emphasis Applicant's).

Examiner respectfully notes that the standing rejection does consider the teachings of the **entirety** of Combs' downstream path, even without the incorporation of teachings from Cook. That is, the standing rejection **already recognizes** that Combs does not expressly disclose the claimed "said passive all-optical downstream path having a second termination at said customer premises". Accordingly, the standing rejection identifies **other known alternative** downstream path configurations, such as "fiber-to-the-building" (Cook, FTTB in Fig. 6) and "fiber-to-the-home" (FTTH) (Cook, "Fiber-to-the-Home" on p. 84, col. 2., last paragraph – p. 85, col. 1) in Cook. Modified with one of these known alternative downstream path configurations, the combination of Combs **and** Cook does teach the claimed "said passive all-optical downstream path having a second termination at said customer premises", as detailed in the treatment of claim 1 of the Final Rejection, mailed on 10 December 2008. Thus, not only does the standing rejection consider the teachings of the **entirety** of Combs' downstream path (even without the incorporation of teachings from Cook), but the standing rejection also demonstrates a **greater, even more whole**,

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**understanding** of the state of the art by recognizing and incorporating related teachings from **other** references, such as Cook, not confining the determination of patentability solely to the scope of a **single** reference, i.e., Combs. Accordingly, this point is not persuasive.

**Regarding the second point**, Applicant states:

2. The Examiner asserts that the Applicants "refer to an embodiment of Combs that is not employed in the standing rejection." (See Office Action p. 8). Applicants' remarks with respect to Point 1 are pertinent here as well. Specifically, the Examiner refers to only a segment of the communication path disclosed in Combs, ignoring the full downstream communication path depicted and described in the reference. The Examiner refers to the portion of Combs's downstream communication path only up to the mini-fiber nodes mFN, while denying the full disclosure of an active downstream communication path. Again, such an interpretation is contrary to the "as a whole" examination requirement. This is true, even if Combs is to be combined with the disclosure of Cook.

(Remarks, p. 7, paragraph item 2).

Similar to the treatment of the first point above, Examiner respectfully notes that the standing rejection does consider the teachings of the **entirety** of Combs' downstream path, even without the incorporation of teachings from Cook. That is, the standing rejection **already recognizes** that Combs does not expressly disclose the claimed "said passive all-optical downstream path having a second termination at said customer premises". Accordingly, the standing rejection identifies **other known alternative** downstream path configurations, such as "fiber-to-the-building" (Cook, FTTB in Fig. 6) and "fiber-to-the-home" (FTTH) (Cook, "Fiber-to-the-Home" on p. 84, col. 2., last paragraph – p. 85, col. 1) in Cook.

Modified with one of these known alternative downstream path configurations, the combination of Combs **and** Cook does teach the claimed "said passive all-optical downstream path having a second termination at said customer premises", as detailed in the treatment of claim 1 of the Final Rejection, mailed on 10 December 2008. Since the standing rejection **replaces** Combs' distribution configuration of the mini-fiber nodes mFN and their associated coaxial lines with an **alternative** distribution configuration of fiber to customer premises, e.g., FTTB or FTTH of Cook, the combination of the standing rejection does **not** rely on the mini-fiber nodes mFN and their associated coaxial lines to address claim 1. Therefore, Applicant's emphasis on the mini-fiber nodes mFN is moot.

Thus, not only does the standing rejection consider the teachings of the **entirety** of Combs' downstream path (even without the incorporation of teachings from Cook), but the standing rejection also

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demonstrates a **greater, even more whole, understanding** of the state of the art by recognizing and incorporating related teachings from **other** references, such as Cook, not confining the determination of patentability solely to the scope of a **single** reference, i.e., Combs. Accordingly, this point is not persuasive.

**Regarding the third point**, Applicant states:

Applicants respectfully disagree that an intermediate distribution site in Combs may qualify as a "termination at [a] customer premises," as presented in Applicants' claims. In addition to prior remarks in Applicants' responses to various Office Actions, Applicants refer to the following definition provided in Federal Standards FED-STD-1037C 1996: Glossary of Telecommunications Terms--"service termination point: The last point of service rendered by a commercial carrier under applicable tariffs. Note 1: The service termination point is usually on the customer premises. Note 2: The customer is responsible for equipment and operation from the service termination point to user end instruments. Note 3: The service termination point usually corresponds to the demarcation point." (available online at [http://www.its.bldrdoc.gov/fs-1037/dir-033/\\_4803.htm](http://www.its.bldrdoc.gov/fs-1037/dir-033/_4803.htm), provided by Institute for Telecommunications Sciences, U.S. Department of Commerce, National Telecommunications and Information Administration) (see also, ATIS Telecom Glossary 2007, available online at <http://www.atis.org/glossary/>). In view of the foregoing, the intermediate distribution sites (the mini-fiber nodes) of Combs are not termination points as taught and claimed by Applicants. Applicants note that their arguments do not solely rely upon definitions or standards; rather, the foregoing is provided for illustrative purposes.

(Remarks, p. 7, paragraph item 3).

Examiner respectfully points out that the standing rejection does **not** present the argument that "an intermediate distribution site in Combs may qualify as a 'termination at [a] customer premises,' as presented in Applicants' claims", as Applicant infers above. More exactly, the standing rejection **already recognizes** that Combs does not expressly disclose the claimed "said passive all-optical downstream path having a second termination at said customer premises". Accordingly, this portion of Applicant's point is not persuasive.

Additionally, Examiner respectfully notes that the actual claim language of claim 1 simply discloses instances of "termination". Notice that the term "termination" is a relatively broad term. That is, the general understanding of term "termination" does not imply or suggest the narrower scope of the term "service termination point", as cited by Applicant above. Accordingly, this portion of Applicant's point is not persuasive.

Furthermore, Examiner respectfully notes that the standing rejection **replaces** Combs' distribution configuration of the mini-fiber nodes mFN and their associated coaxial lines with an **alternative**

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distribution configuration of fiber to customer premises, e.g., FTTB or FTTH of Cook. Thus, the combination of the standing rejection does **not** rely on the mini-fiber nodes mFN and their associated coaxial lines to address claim 1. Therefore, Applicant's emphasis on the mini-fiber nodes mFN is moot. Accordingly, this portion of Applicant's point is not persuasive.

**Regarding the fourth point**, Applicant states:

4. It is not unclear to Applicants which portions of the references are allegedly being combined in maintaining the rejection of Applicants' claims. However, the Examiner has only reiterated which portions of the references have been selected by the Examiner for combination in order to reject Applicants' claims. It still has not been shown which portions of the references would make it obvious to select the combination of individual components of the references in the manner in which the Examiner has done so as to arrive at Applicants claims. The Examiner does allege that Cook suggests "movement towards digital baseband solutions is likely to encourage the adoption of an all fiber approach." (See Office Action p. 10, citing Cook p. 86 col. 1). However, Applicants respectfully submit that this disclosure is insufficient to provide the motivation to make all the necessary modifications to Combs and incorporate the portions of Cook selected by the Examiner.

Applicants understand that the teaching, suggestion, motivation (TSM) test is no longer the only applicable standard. However, it is still a substantially relevant factor in determining non-obviousness. Applicants respectfully submit that the references do not contain any teaching, suggestion or motivation to combine the references in such a way so as to arrive at Applicants' invention, as embodied in the claims. Furthermore, Applicants contend that the only instructions for how one could theoretically combine Combs and Cook to arrive at Applicants' claims are found in Applicants' own disclosure, and that the Office Action's alleged combination is based on impermissible hindsight.

(Remarks, p. 8, paragraph item 4).

Examiner respectfully notes that the treatment of claims 1, 16, and 18 in the Final Rejection, mailed on 10 December 2008 does show "which portions of the references would make it obvious to select the combination of individual components of the references in the manner in which the Examiner has done so as to arrive at Applicants claims" and "teaching, suggestion, or motivation to combine the references in such a way so as to arrive at Applicants' invention, as embodied in the claims" and "how one could theoretically combine Combs and Cook to arrive at Applicants' claims". However, Applicant does not recognize or address the merits of this treatment of claims 1, 16, and 18. To further clarify this treatment of claims 1, 16, and 18, notice the following explanation of the rationale of obviousness in the standing rejection (refer to the standing rejection in the Final Rejection, mailed on 10 December 2008 for additional details):

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- Combs teaches **(A)** a distribution configuration to customer premises, recognizable as a fiber/coax hybrid network (Cook, p. 83-84, "Fiber/Coax Systems; Combs, fibers 114, 120, 122 and coaxial lines in col. 3, l. 42-43).
- Cook teaches this same type of **(A)** distribution configuration (p. 83-84, "Fiber/Coax Systems) and **(B) other alternative** distribution configurations (Cook, FTTB in Fig. 6, FTTH "Fiber-to-the-Home" on p. 84, col. 2., last paragraph – p. 85, col. 1) that employ "a passive all-optical downstream path having...a second termination at...customer premises", as claimed.
- Cook teaches that **(B)** is an **alternative** to **(A)** (e.g., "Fiber-to-the-Home" on p. 84, col. 2., last paragraph – p. 85, col. 1; e.g., "Choice of a FTTH, fiber/coax or fiber/copper pair architecture" on p. 86, col. 1, first full paragraph; e.g., "Competition between all-fiber and fiber/coax options" on p. 86, col. 1, second full paragraph; e.g., "An alternative to these hybrid networks is a FTTH solution", p. 86, col. 2, first full paragraph).
- In view of Cook, one could employ **(B)** as an **alternative** to **(A)** in Combs. An "alternative" suggests the process of **replacement** of the configuration of (A) with the configuration of (B).
- Cook teaches relative **benefits** of **(B)** over **(A)**, which would provide suitable **motivation** for the use of **(B)** in Combs (Cook, e.g., movement toward digital baseband solutions is likely to encourage the adoption of an all fiber approach for fully adequate upstream capability for the long term, p. 86, col. 1, 1st two full paragraphs; e.g., "future proof technology" on p. 86, col. 1, last full paragraph; e.g., "An alternative to these hybrid networks is a FTTH solution, which will enable the network operator to realise a number of benefits" on p. 86, col. 2, first paragraph).

Accordingly, Applicant's point is not persuasive.

**Regarding the fifth point**, Applicant states:

5. Applicants refer to their prior remarks in response to earlier Office Actions.

(Remarks, p. 8, paragraph item 5).

Similarly, Examiner respectfully refers to prior responses in earlier Office Actions. Accordingly, this point is not persuasive.

**Regarding the sixth point**, Applicant states:

6. The Examiner alleges that Cook "provides a practical instruction on how to implement the alternative configuration, i.e. remove active electronics." (See Office Action. p. 13). Applicants respectfully disagree and submit that the modifications are substantial and not disclosed in either of the references. However, accepting the premise for the sake of argument, this only reinforces Applicants' prior remarks that Cook teaches away from Applicants invention. Specifically, Cook teaches away from Applicants' invention, as a whole, because Cook is critical of active systems (that is, systems with active components in the communication path). (See Cook p. 80-81, Section titled "Deployment Issues and Teleco Pans"). Notably, Applicants teach and claim an active upstream communication path from the customer premises to the central office.

Applicants also note that Combs is an active system in both upstream and downstream communication paths. Thus, Applicants submit that it is improper to replace the active downstream communication path of Combs with the allegedly all fiber passive optical downstream communication path of Cook, while at the same time leaving the active upstream components of Combs in the alleged combination of Combs and Cook.

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(Remarks, p. 8-9, paragraph item 6).

Regarding the first paragraph of this point, Examiner respectfully notes that Cook is **not universally critical** of active systems. That is, the portion cited by Applicant does not represent the totality of Cook's teachings. For example, Cook's criticism of active systems is **contextual**. That is, Cook recognizes that different types of solutions are applicable for different types of situations ("For both [active] and [passive] systems there are still limitations on the type of customer that can be economically served. Thus it will not be possible in the foreseeable future to take fiber directly to the great mass of one-line telephony customers – such large scale deployment can only be justified via demand for future broadband services (discussed later in this article). For these very small customers, variants to both architectures have been developed in which fiber is extended down to a small **active** node at the curb, with conventional copper pairs being use for the final customer drops", p. 80, col. 1, second paragraph). Moreover, Cook appreciates the flexibility in the state of the art to produce "variants" to active and passive architectures to accommodate the needs of various situations ("variants" on p. 80, col. 1, second paragraph). Additionally, the standing rejection notes that Combs **already** teaches "an active upstream communication path from the customer premises to the central office" (e.g., upstream links in Figs. 3-4 from termination at end-users 112 in Fig. 1 to termination of 114 at head-end 102 in Fig. 1). Accordingly, the first paragraph of this point is not persuasive.

Regarding the second paragraph of this point, Examiner respectfully points out that the standing rejection does not rely on a complete replacement of all of the communication paths of Combs. More exactly, the standing rejection identifies a **certain portion** of Combs that is known to be open to **known modifications**, i.e., the **distribution configuration** to customer premises. In Fig. 1 of Combs, this configuration corresponds to the distribution configuration **after** mux-node 104. In Combs, **(A)** the distribution configuration employs a hybrid network of fibers and coaxial lines (fibers 114, 120, 122 and coaxial lines in col. 3, l. 42-43). Cook teaches **(B)** alternative distribution configurations that employ an all fiber approach (Cook, fiber to Customer's premises in Fig. 6, "fiber-to-the-home" implies termination at the "home"/customer premises). Replacement of **(A)** with **(B)** results in the **replacement** of the hybrid

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network of fibers and coaxial lines with an all fiber approach. As Cook teaches that **(B)** is an **alternative** to **(A)** (e.g., "Fiber-to-the-Home" on p. 84, col. 2., last paragraph – p. 85, col. 1; e.g., "Choice of a FTTH, fiber/coax or fiber/copper pair architecture" on p. 86, col. 1, first full paragraph; e.g., "Competition between all-fiber and fiber/coax options" on p. 86, col. 1, second full paragraph; e.g., "An alternative to these hybrid networks is a FTTH solution", p. 86, col. 2, first full paragraph), it follows that the suggested **replacement** of the hybrid network of fibers and coaxial lines of Combs with the all fiber approach of Cook is **proper**. Also, notice that the **scope** of the modification is restricted to the distribution configuration to customer premises in Combs **after** mux-node 104. Thus, the combination of the standing rejection retains mux-node 104 and its active upstream components. Accordingly, the second paragraph of this point is not persuasive.

**Regarding the seventh point**, Applicant states:

7. Applicants refer to their prior remarks in response to earlier Office Actions and their comments in Point 6 above.

(Remarks, p. 9, paragraph item 7).

Similarly, Examiner respectfully refers to prior responses in earlier Office Actions and Examiner's treatment of the sixth point above. Accordingly, this point is not persuasive.

**Regarding the eighth point**, Applicant states:

8. The Examiner alleges that Applicants' "citations from Cook are contextual" and that Combs is the starting point for the rejection, not Cook. (See Office Action p. 15). Respectfully, Applicants object to the Examiner's approach in evaluating Applicants' claims under 35 U.S.C. § 103.

Again, "a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." (See MPEP 2141.02 (VI)). This applies to both Combs and to Cook; in particular, the portions of Cook that are critical of active communication paths. See, for example, Cook p. 80-81: "The drive [in the U.S.] has been to develop FTTC systems (ADS and PON) for general deployment in residential areas. Given the relatively low density of U.S. housing developments, this ideally requires very small active nodes to be deployed at the curb serving only 4 living units (LUs). The problems of engineering, installing powering and maintaining such large numbers of small nodes, and at the same time achieving acceptable whole life costs, are particularly difficult...BT [British Telecom] studies have shown that the PON approach has greater benefits in minimizing the proportion of the per line cost incurred in deploying equipment at the exchange and in the fiber infrastructure down to the customer...The synergy between PON systems and SDH [synchronous digital hierarchy] is expected to grow." (Emphasis added).

Given at least the foregoing, Combs and Cook cannot be appropriately combined under 35 U.S.C. § 103 to reject Applicants' claims.

Furthermore, the Examiner states: "The main difference between Combs and Applicant's claimed invention is not the use of whether or not active and/or passive elements are employed,



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or even whether or not 'Cook teaches away from Applicant's system/method'. Rather, the main difference is the issue of the 'distribution configuration to the customer premises', as noted in the treatment of claim 1." (See Office Action p. 15) (emphasis added). However, in addition to the requirement that "a prior art reference must be considered in its entirety, i.e., as a whole" (MPEP 2141.02 (VI)), the claimed invention (i.e. Applicants' claimed invention) must also be considered as a whole. (See MPEP 2141.02 (I): "In determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the difference themselves would have been obvious, but whether the claimed invention as a whole would have been obvious."). "Distilling an invention down to the 'gist' or 'thrust' of an invention disregards the requirement of analyzing the subject matter 'as a whole.'" (See MPEP 2141.02 (II)).

The "transmitting" (downstream) and "receiving" (upstream) clauses in Applicants claim 1, for example, cannot be analyzed completely separate but must be considered as a whole. In focusing on the "main difference" Applicants submit that the portions of the references teaching away from Applicants' claims, in particular, the active upstream portions, are inappropriately ignored.

Thus, Applicants respectfully submit that the pending claims are not obvious in view of Combs and Cook.

(Remarks, p. 9-10, paragraph item 8, emphasis Applicant's).

Regarding the first three paragraphs of this point, note that they raise the similar issue of the first paragraph of the sixth point above. Similarly, Examiner respectfully notes that Cook is **not universally critical** of active systems. That is, the portion cited by Applicant does not represent the totality of Cook's teachings. For example, Cook's criticism of active systems is **contextual**. That is, Cook recognizes that different types of solutions are applicable for different types of situations ("For both [active] and [passive] systems there are still limitations on the type of customer that can be economically served. Thus it will not be possible in the foreseeable future to take fiber directly to the great mass of one-line telephony customers – such large scale deployment can only be justified via demand for future broadband services (discussed later in this article). For these very small customers, variants to both architectures have been developed in which fiber is extended down to a small **active** node at the curb, with conventional copper pairs being use for the final customer drops", p. 80, col. 1, second paragraph). Accordingly, the first three paragraphs of this point are not persuasive.

Regarding the last three paragraphs of this point, note that the standing rejection (1) starts with **Combs** as the primary reference of the combination, not Cook. Thus, the combination starts with the active upstream portions of mux-node 104 of Combs. The **scope** of the modification to Combs is restricted to the distribution configuration to customer premises in Combs **after** mux-node 104. Thus, the combination of the standing rejection retains mux-node 104 and its active upstream components.

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Additionally, as noted in the treatment of the first three paragraphs of this point, (2) Cook's teachings are **more balanced** than Applicant's characterization of "teaching away" from active upstream portions. That is, a full understanding of Cook's teachings will recognize that Cook **does not teach away** from active upstream portions but, rather, appreciates active teachings, such as "active upstream portions", as a **choice** among suitable alternatives according to various situations (Cook, p. 80, col. 1, second paragraph). Accordingly, the second three paragraphs of this point are not persuasive.

**Summarily**, Applicant's arguments are not persuasive. Accordingly, Examiner respectfully maintains the standing rejections.

/Kenneth N Vanderpuye/

Supervisory Patent Examiner, Art Unit 2613